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ABSTRACT

This paper sets forth a comparative description of the constructs required to isolate and analyze language behavior central to the study of paraphrase--which is here considered central to an understanding of the process of idea sharing in the classroom. Findings are presented which suggest significant black/white differences in terms of these constructs. In particular, black pupils use more wh- complements ("what I want" in "I know what I want"); black pupils adjoin more frequently than do whites, specifically with conditional ("if you leave I'll cry") and purposive ("Study hall is provided for pupils to study in"); white pupils use more conjoining additive links ("Tom left and Mary stayed"), and there is more proform substitution of the type involving a referent shorter than a simplex sentence in white classrooms than in black classrooms. See related documents AL 002 750, AL 002 751 and AL 002 753. (Author/FWB)

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PREREQUISITES TO THE ANALYSIS OF PARAPHRASE IN CLASSROOM VERBAL INTERACTION*

By

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Introduction

Our primary assumption is that organized education is a process of enculturation whereby teachers attempt to cause the cognitive repertoires and cognitive processes of students to coincide with definable cultural and epistemological ends. The question to be answered is: How does one person come to represent what is being represented in the cognitive field of another person? Natural language provides the major representational medium for sharing and discovering ideas. Thus, one of our corollary assumptions is that symbol configurations produced in the verbal interaction process contain analyzable structure. That is, to state that a teacher can act to increase the process-idea sharing abilities of students is to presuppose the existence of a set of structured processes and ideas.

Our intention is to ascertain the degree to which selected structures which are essential to the study of paraphrase vary in relative frequency in black and white classrooms. An understanding of the kinds of structures we have selected for comparison is prerequisite to a fuller and more interesting investigation of paraphrase and the dynamics of meaning sharing in the classroom. Paraphrase, for this study, is broadly defined as two utterance strings which share at least one of the constructs provided by our analytic system. Absolute paraphrase obtains when the two strings are identical, that is, they share all the constructs; partial paraphrase obtains when one or more constructs are shared but not all. This paper explores constructs on which the study of paraphrase relations within teacher-pupil communication must eventually rest.

We will survey a set of syntactic structures, synonym occurrences, and metalinguistic substitutions. The variables which these constructs represent have been tested for their covariance with the nonlinguistic variable of race. Comparisons are tested for significance by a rapid method for determining the significance of difference of two percents (Davies, 1963). What results from these analyses are sociolinguistic profiles which suggest dimensions of sameness and difference in the communicative economies of black and white students in the classroom.

Syntactic Structures. The data for the comparison of syntactic structures were fifteen ten-minute samples of texts reconstructed for simplex sentences and coded for adjoining, conjoining, and embedding. Our analysis at this level consists of a percentage comparison of these syntactic structures and the meaning features of sentence links used by black and white pupils. Tables I and II indicate the differences to be found in these data. Some of these differences will be commented on more exhaustively in Loflin's paper to follow. We note for our purposes that there are significant differences in distributions for some of the structures within these categories.

Black pupils use adjoined sentences significantly more frequently than whites. Specifically, they adjoin with conditional and purposive links with greater frequency than do whites. (See Figure II.) In addition, blacks use wh- complements more frequently. (See Figure I.) It is noteworthy that although the comparison does not suggest significant differences for all categories there is a general tendency for black pupils to use more of four of the six types of adjoining links. We also note that white pupils use more of two of the four conjoining links. (See Figure II.)

We call your attention to a finding in Dr. Barron's paper where it was noted that white pupils use the purposive case significantly more often than black pupils. Here we have stated that black pupils use purposive adjoinings significantly more often than whites. The implication is that at a deep syntactic level black and white pupils are favoring different structures to express the same types of ideas. This kind of differential structure selection suggests differences in basic dialectal norms.

The differences in conditional adjoining we feel are partially attributable to the presence of one class in the black pupil sample which had a disproportionate number of such adjoinings. We expect to find the wh- complement bulge in black classrooms compensated for in white classrooms by a set of structures which serve as paraphrase alternatives.

Thus, in addition to providing interesting black/white comparative data these syntactic categories make it possible to observe the high order mechanics of paraphrasing in the classroom. In future analyses of dyadic teacher/pupil exchanges we hope to be able to isolate structural particulars of sameness and difference.

Synonyms and semantic features. Syntactic constructs provide the framework for making judgments regarding sentence sameness and difference. In order to discriminate more subtle meaning sames and differences for lexical elements we have constructed a semantic feature tree which is restricted in generality to samples from two tapes. (See Figure III.)

The semantic feature tree is designed to fill several analytic needs. First, it reflects what the lessons are concerned with lexically. Second, because the tree categorizes every major lexical item in the sample according to an underlying set of semantic components it provides horizontally discriminated contrasting sets and hierarchically ordered class inclusions sets. For example, colony, country and America are differentiated from each other in a horizontal axis at level 5 of the tree. And all three classes are included in the set labeled National at Level 4 of the diagram.

Third, the tree provides a precise definition for each lexical element. Every lexical item is represented at a terminal node on the tree and is defined by tracing its path through the tree. This definition is limited to the context of the classroom interaction in which the lexical element occurred. For example, home as used in the interaction meant the same thing as country, nation, etc., and is definable according to its path in the tree as:

home = Noun - Inanimate - Organizational entity - National entity.

Fourth, the meaning tree, within the boundaries of the lesson period, makes it possible to distinguish synonymous and homonymous usages. Thus, if two or more individual lexical items have the same meaning, they are grouped together at the same terminal point. On the other hand, if one word is used with more than one meaning it is positioned at two terminal nodes. Notice that rank and party were used as synonyms in the lesson and that this fact is represented by the placing of both these words at the same node.

Of course, as this discussion demonstrates, it is possible to discuss sameness of meaning at various levels. For example, a claim of synonymy for two utterances must take into consideration referential information as well as syntactic structure. The two utterances I walked the dog and I walked the dog have the same meaning only if I, dog, and walked reference the same person, dog and time instance of walking. If I in the first utterance references John while it references Susan in the second utterance then obviously the two utterances do not mean exactly the same thing in a referential sense. These referential distinctions are captured in setting up the meaning tree. That is, to the degree possible, all proforms and lexical elements in our system are provided with referents during the process of reconstruction; in the case of proforms the referent rather than the proform is given a position on the tree.

Our comparison of semantic features involved data from the second ten minutes of two eleventh grade social studies classes taught by white female teachers who were over forty years of age. All of the pupils in one class were black whereas all of the pupils in the other were white.

The results of our comparison of semantic features in two classrooms show that the proportion of synonyms grouped at the same terminal node on the semantic tree is the same for black and white classes (See Table IV). Synonyms represented 24.15% of the total words used in the black class and 24.33% of the words used in the white class. We don't know whether these results reflect a general fact about synonyms in English or a particular fact about synonyms in the classroom. Certainly, two utterances judged to be functional paraphrases because of their

referential identity and their apparent substitutability in live interaction will be subject to synonym substitution of the kind made apparent by meaning trees.

Proform substitution. Another type of judgment involved in paraphrase relationships involves metalanguage, the use of a word to reference other words or sentences. Words of this kind are a special class because they reference other symbols. They can be pronouns in the traditional sense, or words such as thing, event, word, etc., which, like a pronoun, may have essentially no meaning of their own but depend on their referents for sets of meaning features.

The use of metalinguistic proform substitutions in verbal interaction make it possible to reference symbols or objects that have already been referenced. From the viewpoint of the receiver the semantic interpretation of a metalinguistic term depends for its explicitness upon the scope of the term (that is, whether or not it ranges over a configuration of sentences of undefined boundaries or a single word) and its distance in time from the immediate message exchange event.

We have restricted ourselves to the analysis of two types of proform substitution. Results of the analysis of these types of proform substitution are given in Table IV. The first involves using a metalinguistic term which references a symbol string which is at least as long as a simplex sentence or is longer, and the second involves the substituting of a proform for a phrase. The type of proform substitution which references a sentence reveals no significant difference

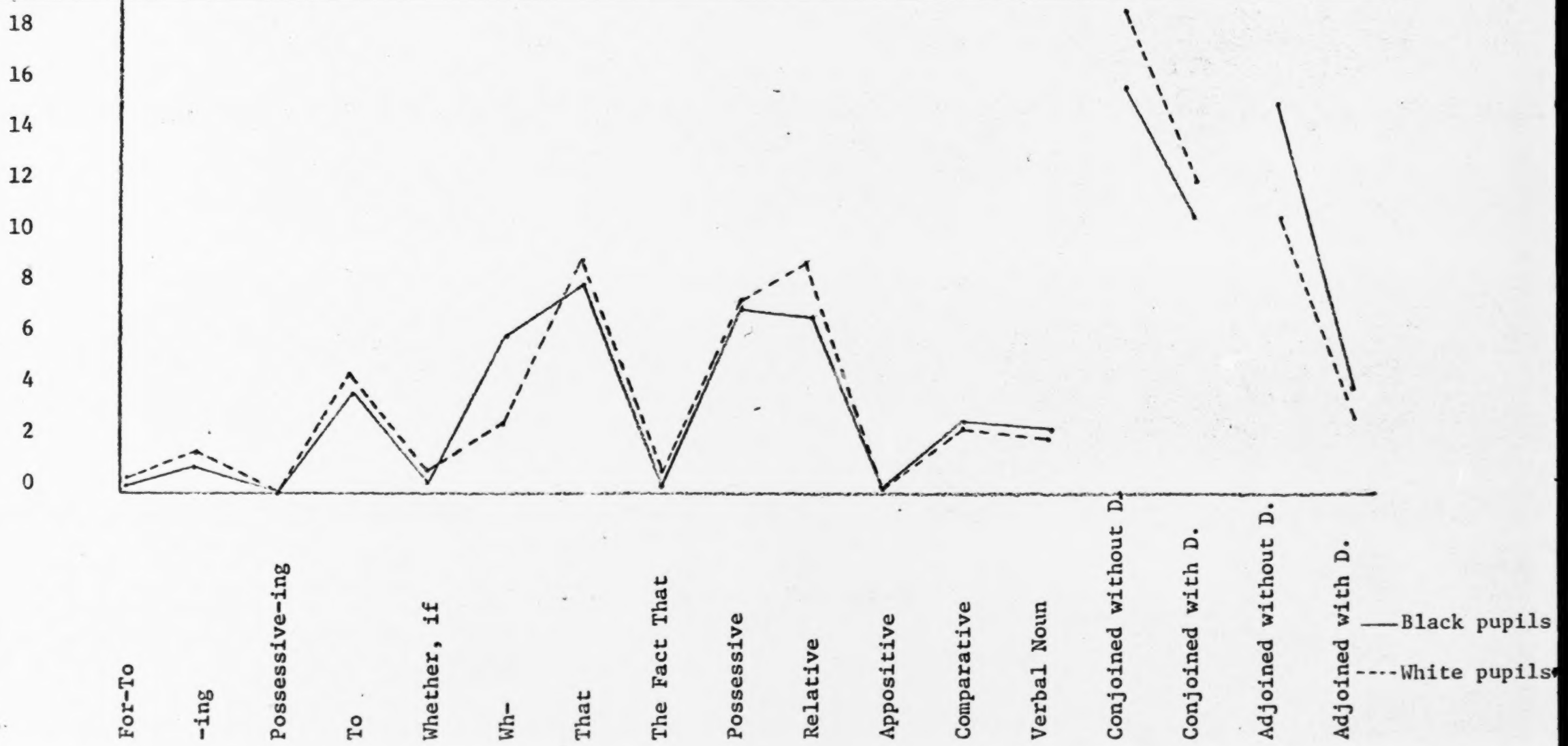
in frequency of use in black and white classrooms. The type which references a phrase occurs significantly more often in white classrooms than in black classrooms. In choosing to use fewer phrase level metalinguistic proforms black pupils reduce the need for contextual fit and consequently reduce the potential for misunderstanding.

Conclusion

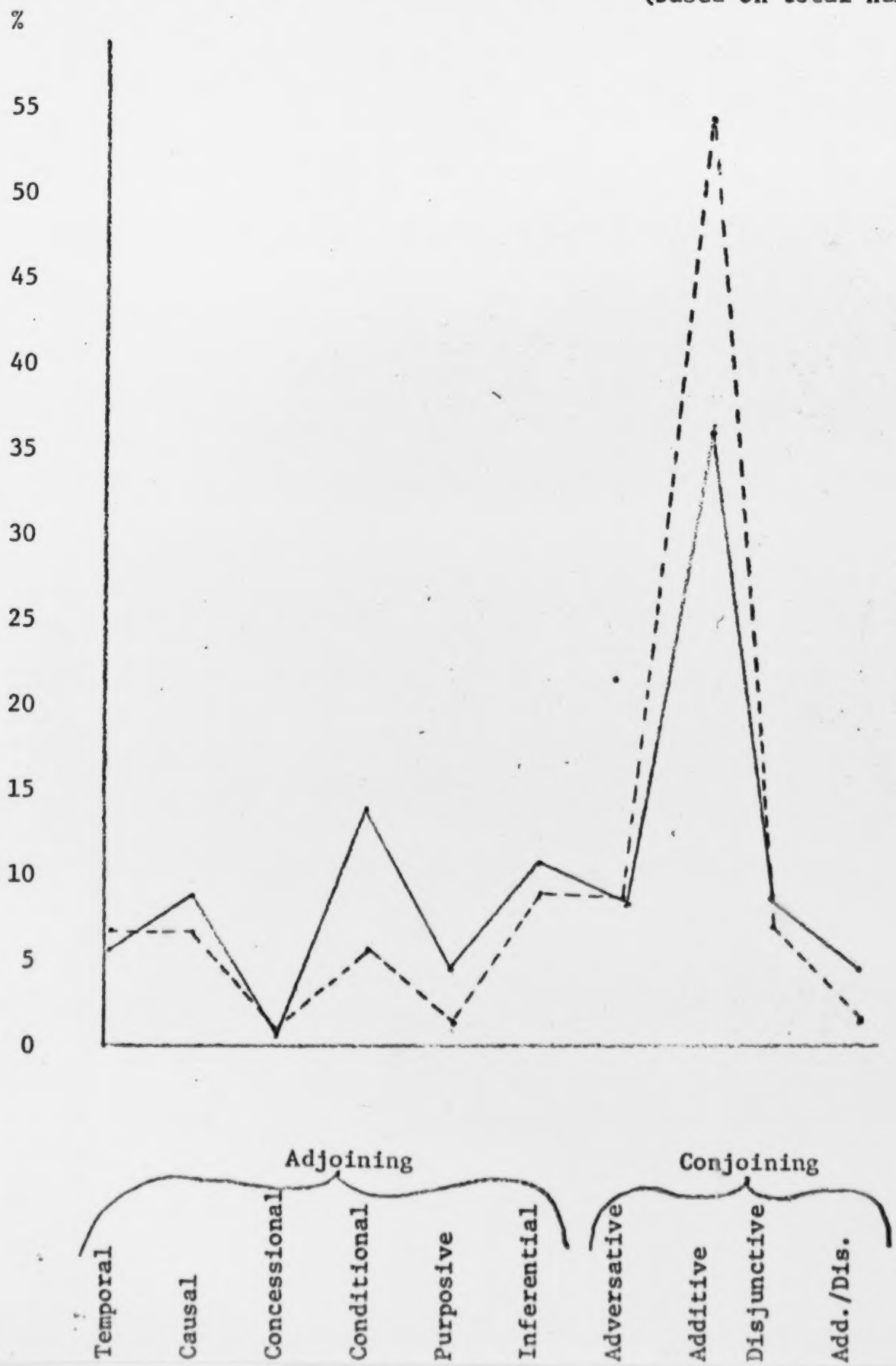
In summary, we have set forth in this paper a comparative description of the constructs required to isolate and analyze language behavior central to the study of paraphrase--which in turn is central to an understanding of the entire process of idea sharing in the classroom. We have further presented findings which suggest significant black/white differences in terms of these constructs. In particular, black pupils use more wh- complements than do white pupils; black pupils adjoin more frequently than do white, specifically with conditional and purposive adjoining links; white pupils use more conjoining additive links, and there is more proform substitution of the type involving a referent shorter than a simplex sentence in white classrooms than in black classrooms.

I. Percent of Embedded, Adjoined, and Conjoined Simplex Sentences used by Black and White Pupils
(Based on total simplex sentences used by pupils)

	For-To	-ing	Possessive-ing	To	Whether, if	Wh-	That	The Fact That	Possessive	Relative	Appositive	Comparative	Verbal Noun	Conjoined without D.	Conjoined with D.	Adjoined without D.	Adjoined with D.
Black Pupils	.35	.78	0	3.75	.35	6.01	7.40	.09	6.71	6.53	.17	2.26	2.00	15.50	10.80	14.72	3.92
White Pupils	.39	1.18	0	4.22	.78	2.55	8.34	.20	6.77	8.24	.10	2.06	1.86	18.06	11.97	10.21	2.55
Level of Significance	NS	NS	NS	NS	NS	p<.01	NS	NS	NS	NS	NS	NS	NS	NS	NS	p<.01	p<.05



II. Percent of meaning features of links used by Black and white pupils
(based on total number of links used by pupils)

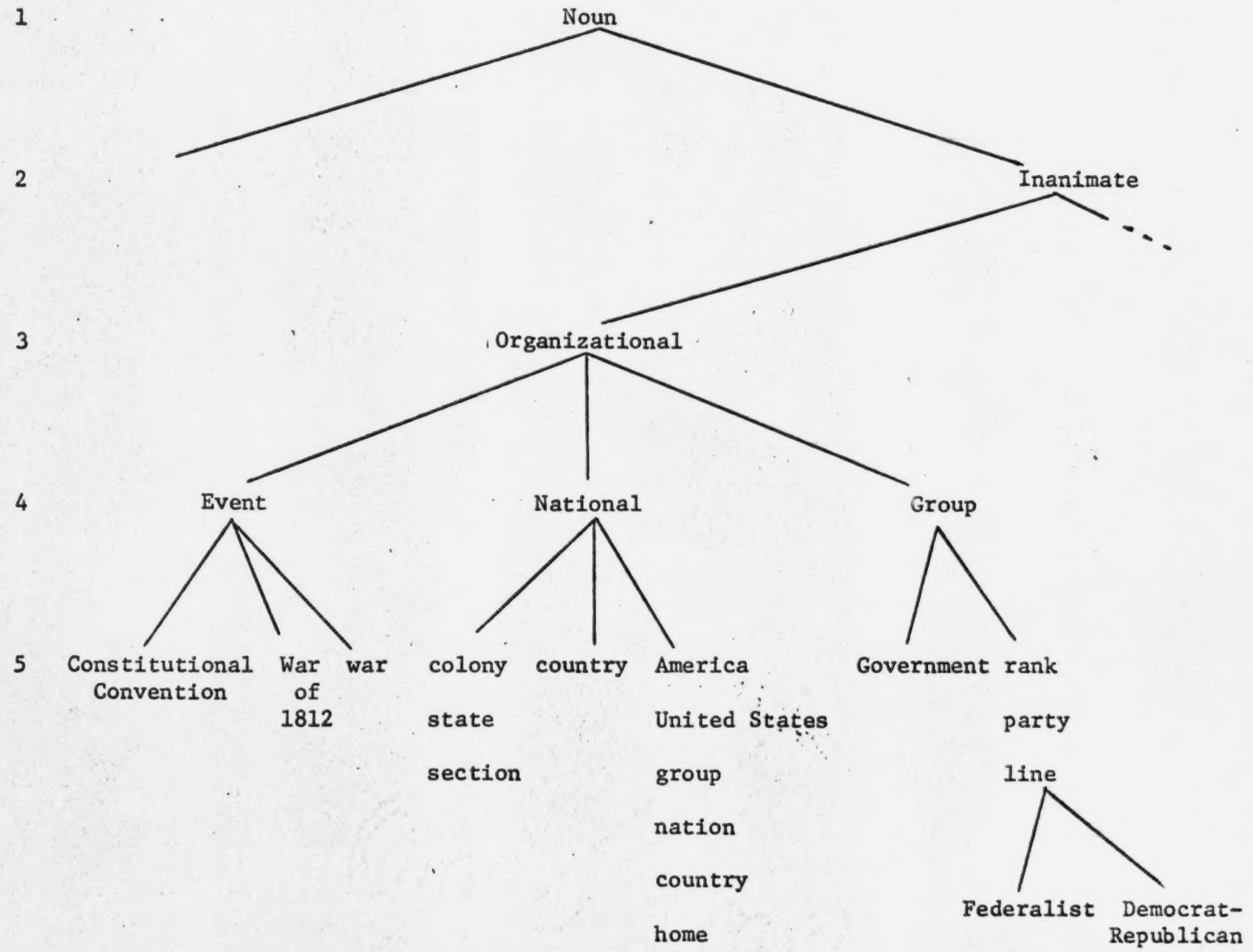


	%	Black Pupils	White Pupils	Level of Significance
Adjoining	Temporal	5.12	6.69	NS
	Causal	8.53	6.69	NS
	Concessional	.34	.35	NS
	Conditional	14.67	5.63	$p < .01$
	Purposive	4.78	2.11	$p < .02$
	Inferential	10.92	3.45	NS
Conjoining	Adversative	7.85	8.10	NS
	Additive	35.15	53.17	$p < .01$
	Disjunctive	8.53	6.69	NS
	Add./Dis.	4.09	2.11	NS

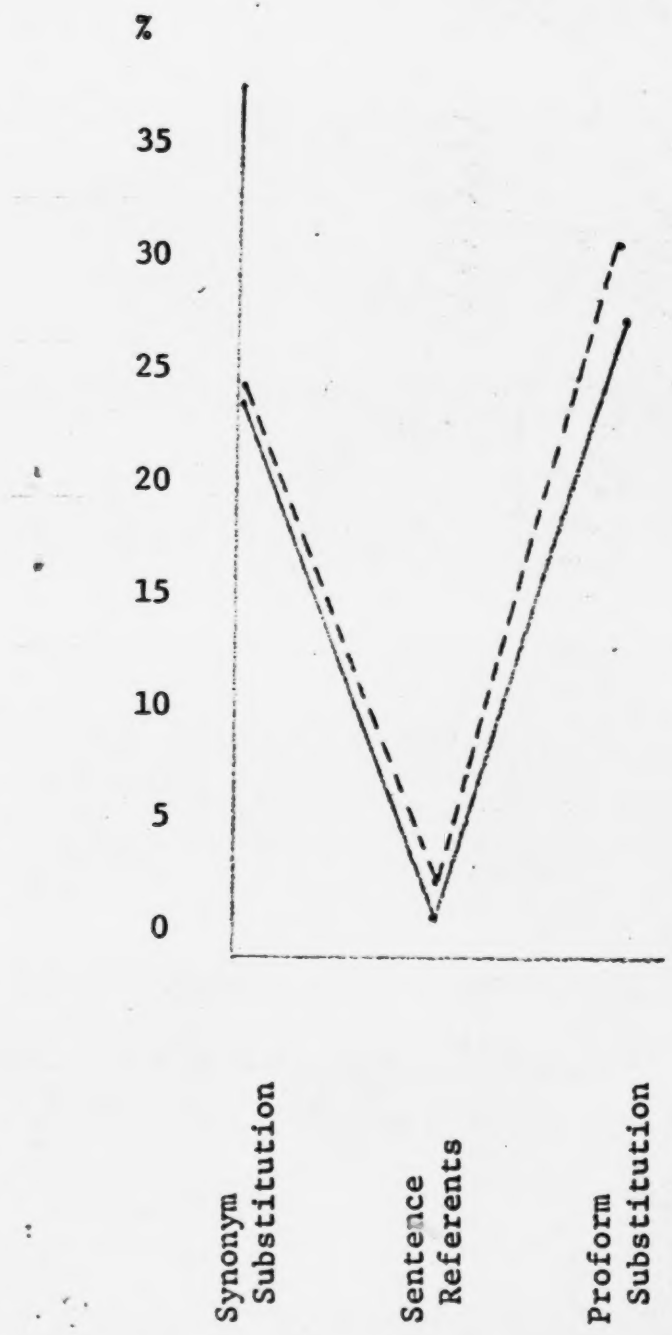
—— Black pupils

---- White pupils

III. Lesson Specific Meaning Tree Diagram



IV. Percent of Synonyms and Metalinguistic Substitution used in Black and White Classrooms
(Synonyms based on total of different words used)
(Metalanguage based on total of nouns and verbs used)



%	Black Classes	White Classes	Level of Sign.
Synonyms	24.15	24.33	NS
Sentence Referent	1.46	2.20	NS
Proform Substit.	26.74	*30.98	$p<.05$

Papers
AERA
6 Feb 1971
Session C46
0830

Handout A

GLOSSARY OF TERMS

for

VERBAL INTERACTION IN THE CLASSROOM

Biddle
Hays
Guyette
Marlin
Barron
Keyes
Loflin

GLOSSARY

Embedding: The combination of at least two simplex sentences so that one simplex (the constituent or embedded sentence) serves a syntactic function (i.e., nominal, modifier, etc.) within the other simplex (the matrix sentence).

Types of embedding

1. for-to complement

   It's all right <u>for</u> Harry <u>to</u> be late.

2. -ing complement

   Nancy enjoys <u>swimming</u>.

3. Possessive -ing complement

   <u>John's riding</u> is terrible.

4. to complement

   Annie started <u>to move</u>.

5. whether, if complement

   Harry asked <u>whether</u> Tom had gone.

   Harry asked <u>if</u> Sue wanted turkey.

6. Wh- complement

   John knew <u>what</u> Helen wanted.

7. That complement

   Mary said <u>that</u> Jim would be late.

8. The fact that complement.

   <u>The fact that</u> I am a woman is irrelevant.

9. Possessive

   <u>Jim's</u> house is on the corner.

10. Relative

    The girl <u>who</u> left was Pat.

11. Appositive

The word seizing has many meanings.

12. Comparative

Tom is friendlier than Bob.

13. Verbal noun

The struggle for civil rights continues.

Conjoining: Two source sentences are joined together by the conjoining links and, but, or, or and/or or their meaning equivalents. Conjoining may occur with or without deletion. In all the examples below the words in parentheses have been deleted from the spoken sentence.

1. And (Additive)

Tom left and Mary stayed. (without deletion)

Tom (left) and Mary left. (with deletion)

2. But (Adversative)

Jim danced, however Sue just sat. (without deletion)

Jim danced but Sue didn't (dance). (with deletion)

3. Or (Disjunctive)

Mark must go or I'll stay home. (without deletion)

Surely Mark (will go) or Pete will go. (with deletion)

4. And/or (additive disjunctive)

I want to go swimming and/or (Iwant to go)to the movies.
(with deletion)
Linda can wear a dress and/or she can wear slacks.

(without deletion)

Adjoining: Two source sentences are joined together by a function word or link which exhibits the logical relationship of adjoining links (see below). Adjoining may occur with or without deletion.

1. Temporal

I'll go <u>when</u> you go. (without deletion)

I'll go <u>whenever</u> you want to (go). (with deletion)

2. Causal

<u>Because</u> you cried, I cried. (without deletion)

I laughed <u>because</u> you did (cry). (with deletion)

3. Concessional

<u>Although</u> today is Saturday, I'm going to school.

(without deletion)

Even though you won't (sing), I will (sing). (with deletion)

4. Conditional

<u>If</u> you leave I'll cry. (without deletion)

If you leave, I will (leave). (with deletion)

5. Purposive

Study hall is provided <u>for</u> pupils to study in.

(without deletion)

A hammer is <u>for</u> (someone)pounding. (with deletion)

6. Inferential

If it snows <u>then</u> we'll have to stay home.

(without deletion)

We'll come <u>if</u> we can (come). (with deletion)

Natural sentence: An utterance which contains one or more simplex sentences and is the unit in the fine post-edited text which begins with a capital letter and ends with a period.

Simplex sentence: A primitive sentential form irreducible into additional sentences.